

General

Title

Venous thromboembolism (VTE) diagnosis and treatment: percentage of patients with VTE treated with LMWH who receive heparin treatment for at least five days after the initiation of warfarin therapy and until INR is greater than or equal to 2.0 for two consecutive days.

Source(s)

Dupras D, Bluhm J, Felty C, Hansen C, Johnson T, Lim K, Maddali S, Marshall P, Messner P, Skeik N. Venous thromboembolism diagnosis and treatment. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2013 Jan. 90 p. [216 references]

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of patients age 18 years and older with venous thromboembolism (VTE) treated with low-molecular-weight heparin (LMWH) who receive heparin treatment for at least five days after the initiation of warfarin therapy and until international normalized ratio (INR) is greater than or equal to 2.0 for two consecutive days.

Rationale

The priority aim addressed by this measure is to prevent progression or recurrence of thromboembolic disease.

It is estimated that over one million patients are identified as having an acute venous thrombotic event in the United States annually. This includes patients with deep vein thrombosis and pulmonary embolism

and is estimated to result in more than 100,000 deaths each year.

Heparin/fondaparinux should be continued for at least five days after the initiation of warfarin therapy and until international normalized ratio (INR) is greater than or equal to 2.0 for two consecutive days.

The anticoagulant effect of warfarin is delayed until clotting factors already circulating are cleared. Although Factor VII has a shorter half-life in the blood (six to seven hours), peak anticoagulant activity is delayed for up to 96 hours until factors with longer plasma half-lives (II, IX and X) have cleared.

A goal INR of 2.5 (range 2.0-3.0) is recommended for the treatment of patients with venous thromboembolism (VTE).

Evidence for Rationale

Ansell JE. Oral anticoagulant therapy--50 years later. Arch Intern Med. 1993 Mar 8;153(5):586-96. [120 references] [PubMed](#)

Dupras D, Bluhm J, Felty C, Hansen C, Johnson T, Lim K, Maddali S, Marshall P, Messner P, Skeik N. Venous thromboembolism diagnosis and treatment. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2013 Jan. 90 p. [216 references]

Holbrook A, Schulman S, Witt DM, Vandvik PO, Fish J, Kovacs MJ, Svensson PJ, Veenstra DL, Crowther M, Guyatt GH. Evidence-based management of anticoagulant therapy: antithrombotic therapy and prevention of thrombosis, 9th ed: American College of Chest Physicians evidence-based clinical practice guidelines. Chest. 2012 Feb;141(2 Suppl):e152S-84S. [216 references] [PubMed](#)

Primary Health Components

Venous thromboembolism (VTE); international normalized ratio (INR); low-molecular-weight heparin (LMWH); warfarin therapy

Denominator Description

Number of patients age 18 years and older and with venous thromboembolism (VTE) treated with low-molecular-weight heparin (LMWH)

Numerator Description

Number of patients age 18 years and older and with venous thromboembolism (VTE) treated with low-molecular-weight heparin (LMWH) who receive heparin treatment for at least five days after the initiation of warfarin therapy and until international normalized ratio (INR) is greater than or equal to 2.0 for two consecutive days

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

Additional Information Supporting Need for the Measure

Unspecified

Extent of Measure Testing

Unspecified

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Ambulatory/Office-based Care

Hospital Inpatient

Hospital Outpatient

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Clinical Practice or Public Health Sites

Statement of Acceptable Minimum Sample Size

Unspecified

Target Population Age

Age greater than or equal to 18 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Data Collection for the Measure

Case Finding Period

The time frame pertaining to data collection is monthly.

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Clinical Condition

Patient/Individual (Consumer) Characteristic

Therapeutic Intervention

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions

Number of patients age 18 years or older and with venous thromboembolism (VTE) treated with low-molecular-weight heparin (LMWH)

Exclusions

Unspecified

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

Number of patients age 18 years and older and with venous thromboembolism (VTE) treated with low-molecular-weight heparin (LMWH) who receive heparin treatment for at least five days after the initiation of warfarin therapy and until international normalized ratio (INR) is greater than or equal to 2.0 for two consecutive days

Exclusions

Unspecified

Numerator Search Strategy

Fixed time period or point in time

Data Source

Electronic health/medical record

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

Percentage of patients with venous thromboembolism (VTE) treated with low-molecular-weight heparin (LMWH) who receive heparin treatment for at least five days after the initiation of warfarin therapy and until international normalized ratio (INR) is ≥ 2.0 for two consecutive days.

Measure Collection Name

Venous Thromboembolism Diagnosis and Treatment

Submitter

Institute for Clinical Systems Improvement - Nonprofit Organization

Developer

Institute for Clinical Systems Improvement - Nonprofit Organization

Funding Source(s)

The Institute for Clinical Systems Improvement's (ICSI's) work is funded by the annual dues of the member medical groups and five sponsoring health plans in Minnesota and Wisconsin.

Composition of the Group that Developed the Measure

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Disclosure of Potential Conflicts of Interest

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Guideline-Related Activities: None

Research Grants: None

Financial/Non-Financial Conflicts of Interest: None

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Research Grants: None
Financial/Non-Financial Conflicts of Interest: None

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2013 Jan

Measure Maintenance

Scientific documents are revised every 12 to 24 months as indicated by changes in clinical practice and literature.

Date of Next Anticipated Revision

The next scheduled revision will occur within 24 months.

Measure Status

This is the current release of the measure.

This measure updates a previous version: Institute for Clinical Systems Improvement (ICSI). Venous thromboembolism diagnosis and treatment. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2012 Jan. 96 p.

The measure developer reaffirmed the currency of this measure in January 2016.

Measure Availability

Source available from the [Institute for Clinical Systems Improvement \(ICSI\) Web site](#)

For more information, contact ICSI at 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425;

NQMC Status

This NQMC summary was completed by ECRI Institute on August 1, 2012.

This NQMC summary was updated by ECRI Institute on August 5, 2013.

The information was reaffirmed by the measure developer on January 13, 2016.

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Production

Source(s)

Dupras D, Bluhm J, Felty C, Hansen C, Johnson T, Lim K, Maddali S, Marshall P, Messner P, Skeik N. Venous thromboembolism diagnosis and treatment. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2013 Jan. 90 p. [216 references]

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